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Original Article

Tobacco use among serving army personnel: An epidemiological study

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ABSTRACT

Background: India has consequential burden of tobacco related disease and death. Though there are surveys conducted at national and regional level yet the information about tobacco consumption among army personnel is scarce. Thus an epidemiological study was conducted to estimate the prevalence and assess determinants of tobacco consumption amongst army personnel.

Methods: A community based cross sectional study was conducted using simple random sampling to enroll 380 personnel. Data was collected using a pretested and validated questionnaire with relevant domains.

Results: The age of participants was 33 + 7 years. The prevalence of ever tobacco users was 47.90% (95% CI: 42.78–53.05) and of current tobacco users was 35.00% (95% CI: 30.21–40.03). No association was found between ever users and age group, monthly income, occupation, length of service, family member usage ($p > 0.05$). Among smokeless tobacco forms, Khaini was most preferred (49.45%) followed by Gutkha. Majority of them (41.21%) were moderate tobacco chewers. Tobacco user friends (53.85%) were the main stimulants, which induced respondents to start tobacco. The important source of tobacco procurement was local vendor. 91.76% ever user were aware of the ill-effects of the tobacco use. There was statistically significant association for knowledge regarding tobacco use being harmful to family members between current users and ever users ($p = 0.036$).

Conclusion: The study highlights a high prevalence of tobacco user amongst army personnel. Reduction of easy accessibility, Behaviour Change Communication activities and stricter implementation of regulations are urgently required.

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Introduction

World Health Organization estimated that tobacco was responsible for 8.8% death worldwide in the year 2000 and by 2030, the number of premature deaths attributable to tobacco would double to 10 million deaths every year, with about 7 million deaths taking place in developing countries.[1] India's tobacco problem is more complex due to tobacco being consumed in many forms. The prevalence of tobacco use in any form among men and women has been reported to be high (15–60% from almost all parts of India[2–6] and approximately one million deaths per year are attributed to tobacco consumption.[7]

Data on smoking habits of the army personnel in India is scarce. On literature search in Medline, Embase and manually searching for references authors could find only one study on smoking habits among army personnel published in 1986[8] apart from a survey report on smoking habits of men in Rajasthan in which army personnel also participated.[9] However, no exhaustive study has been carried out in respect of army personnel in India in past three decades. The army personnel constitute a closed community. They are exposed to certain stresses which are rather unique to this group and quite different from civilian population, such as regimentation and discipline of military life, lack of privacy, long periods of separation from families due to various reasons, fear of losing life or limb in times of war, counter insurgency operations, extremes of climate, etc. Although army personnel are highly disciplined and dedicated, tobacco use and related diseases can affect their medical fitness which has a direct bearing on their fighting efficiency.

Since no exhaustive study on tobacco use of army personnel is available in the current literature, this study was conducted to provide a comprehensive overview of tobacco use in army personnel, fill up gaps in knowledge and to recommend suitable preventive and control measures.

Materials and methods

A community based cross-sectional study was conducted with study population as serving male personnel of Army, presently serving in Pune and the reference population as other ranks (OR) belonging to Indian Army. Ethical approval was obtained from the institutional ethical committee (IEC).

Sample size was calculated using the Cochran formula[10] and applying for finite correction, anticipated prevalence of tobacco use as 50% in army personnel and alpha of 5%. The calculated sample size was 370 however final sample of 380 was collected for this study. The sample was selected using ''simple random sampling'' procedure by use of Epi Info 6 for generating random numbers. The inclusion criteria were defined as persons permanently posted in Pune and not suffering from any illness as ascertained by their records. Persons on temporary duty in Pune for short duration were excluded from the study.

A questionnaire was prepared in consultation with experts in the field and pilot study was done on 30 subjects to assess its validity and reliability. Chronbach's alpha was calculated with the help of Intercooled Stata 8 software, to test the reliability of the questionnaire which was divided into three domains for assessing Knowledge (8 variables, alpha 0.75), Attitude (39 variables, 0.78) and Practice (35 variables, 0.76). Requisite changes were made in the questionnaire following the pilot study.

The participants were explained in detail about the purpose and methodology of the study and were fully assured strict confidentiality. Informed consent was obtained on informed consent form.

The technique of personal interview with the help of the schedule was utilized for data collection. Each participant was interviewed by one investigator (AP) only. The interview was carried out either in English or Hindi and average duration of an interview was 35 min. At the end of data collection, requisite health education was imparted to all members of the study-population.

Data was entered into Microsoft excel worksheets and coded appropriately. The analysis was carried out using SPSS ver 14.0. For the purpose of analysis scale for consumption of smokeless tobacco was developed after discussion with experts in the field. Consumption of smokeless tobacco 1–2 times per day, 3–6 times per day and more than 6 times per day was defined as mild, moderate and heavy consumption respectively. Descriptive statistics were used to appropriately describe the data. Chi-square and 't' test were used for categorical and continuous data, respectively.

Results

The age of participants was 33 ± 7 years (mean $\pm$ standard deviation). Table 1 illustrates the demographic characteristics of study participants. Amongst 380 respondents, 182 (47.90%)

Table 1 – Demographic characteristics of study participants.

Characteristic	N	%
Age group (years)		
17–24	42	11.05
25–34	185	48.61
35–44	114	30.00
≥45	34	10.26
Monthly income		
≤14,999	89	23.42
15,000–19,999	208	54.73
20,000–24,999	58	15.26
≥25,000	25	6.59
Education		
Up to high school	192	50.53
Intermediate	139	36.58
Graduate & above	23	12.89
Occupation		
Unskilled & semi-skilled	162	42.63
Skilled	171	45.00
Clerks	27	7.10
Semi-professional	20	5.27
Length of service (years)		
1–10	122	32.10
11–20	166	43.68
≥20	92	24.22

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